

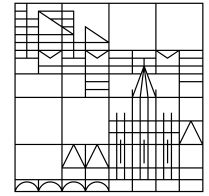
2, Apr, 2019 10:30-12:30,

Session 1: Comparing Climate Change Policy Networks (Organized by  
Nina Kolleck, David Tindall and Alexandra Goritz)

Universitz Alliance for Sustainability Spring Campus (April 1-5, 2019)

At: Freie Universität Berlin Section (Febeckstraße 23-25)

Universität  
Konstanz



# **Scientification of Policy Domains and Evolution of Organizational Beliefs: Climate Change Policy Networks in Germany and Japan**

**Dr. Keiichi Satoh**

University of Konstanz

**Dr. Nagel Melanie**

University of Konstanz

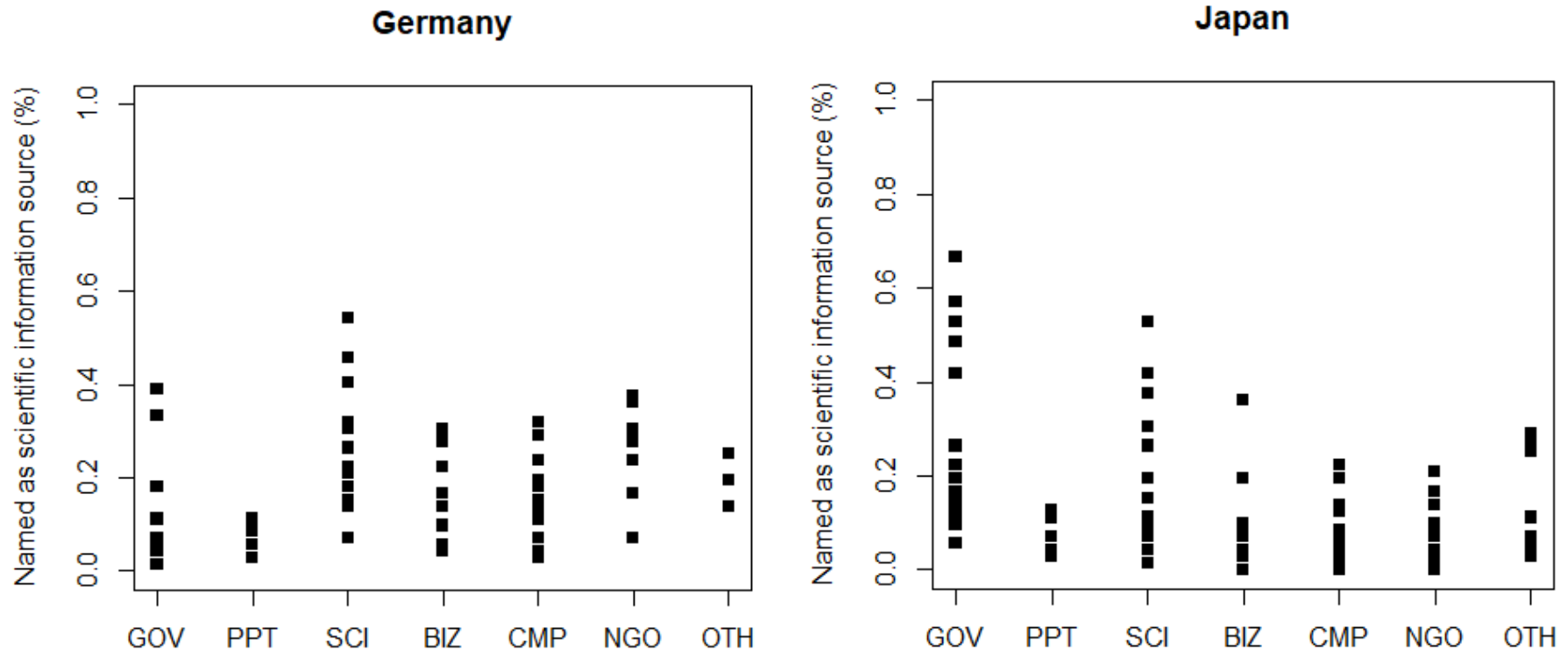
**Prof. Dr. Volker Schneider**

University of Konstanz

# In Brief: Faith in climate change and organizational ecology

- **Motivation**
  - Relationship between organizational ecology and “scientification” of the policy domain
- **RQ**
  - How varying climate change policy networks and organizational ecologies in Germany and Japan produce different policy orientations in the both countries
- **Data**
  - Qualitative: historical development of the organizational field in
  - Quantitative: Survey to the organization in Japan (n=72) and Germany (n=51) between 2012 and 2013.
- **Result**
  - More “science user” type organization in Japan → skeptical to climate change
- **Implication**
  - Wider range of “Scientification” of the organizational field in Germany
  - Importance to focus on belief formation, not taking beliefs as given

# “From where does your organization get climate change scientific information?”



- Variety of sectors as scientific information source
- Ministry as main source for climate change science in Japan; Scientific organizations as main source in Germany

# Framework: Organizational ecology and Faith in science

## General Notion

- Different degree of faith in science among countries and among policy issues

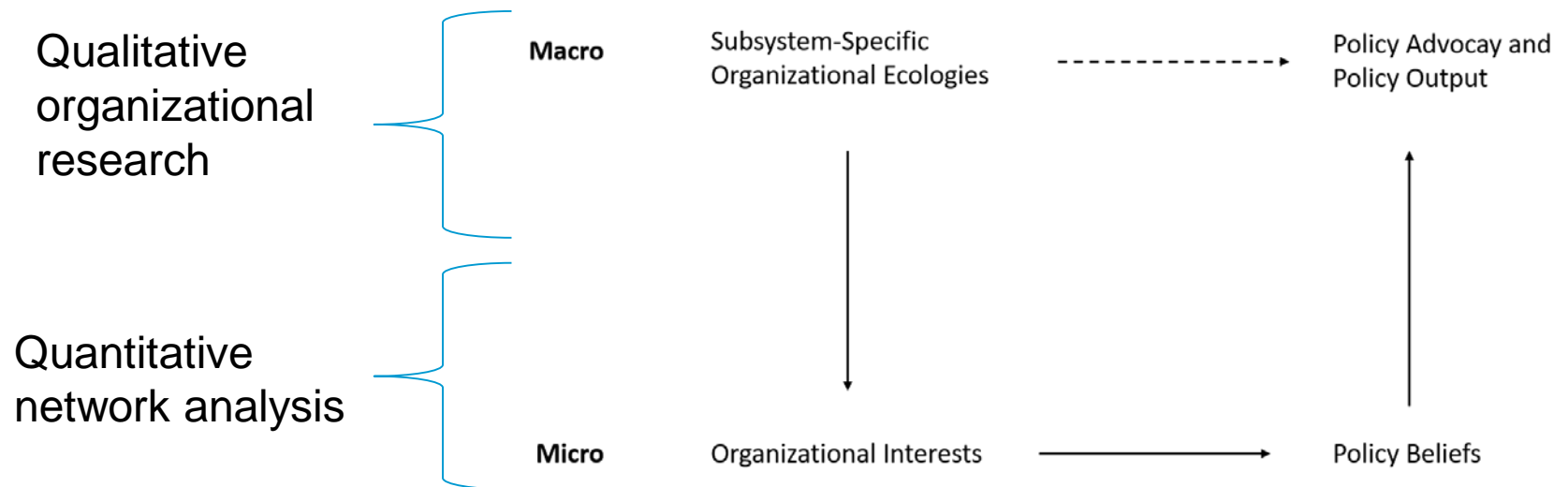
## Question

How is scientific knowledge shared and how is trust in expertise constituted?

- Attribute effect: composition of the organizations
- Network effect: Exchange of the information

## Feature of our Framework

- **Policy network approach**: network among the major policy actors
- **Belief as the dependent variable**: shaped by interests and ideas (not: Belief = interest)
- Coleman-Boudon-type multi-level explanatory model: Macro-micro interaction model



# Historical Development of Organizational Ecologies

## Feature of the organizational ecology in Japan and Germany

- Japan:
  - Ministerial liaison research Institutes as main scientific knowledge producer
  - Scientific research and its debates are conditioned by this governmental sectionalism
- Germany
  - Institutionalized advisory bodies where various stakeholder gather
  - Evolutions of a wider range of independent research institutes (those by political parties, by NGOs and independent academic institutes)

## Historical background

- Japan:
  - Strong autonomy of the Ministries for the policy-making
  - No legal provision for NGOs → prevented NGOs to grow and other civil society actors
- Germany
  - Consensus democracy system
  - Early institutionalization of enthusiastic climate policy

# Quantitative policy network research: Data and Method

## Data

- Comparing climate change policy network project (COMPON Project)
- Survey to major organizations in climate change policy-making during 2012 and 2013
  - Japan (n=72, response rate = 57.6%)
  - Germany (n = 51, response rate = 72.9%)

## Method

- Step 1: Making a *role* typology of organization in terms of scientific engagement (cluster analysis)
- Step 2: Comparing faith score (belief in climate science: composite variable)
- Step 3: Investigate how organizational population determine the organizational faith (multi-level regression with autocorrelation effects)
- Step 4: Influence structure among organizational *role* (*QAP-regression*)

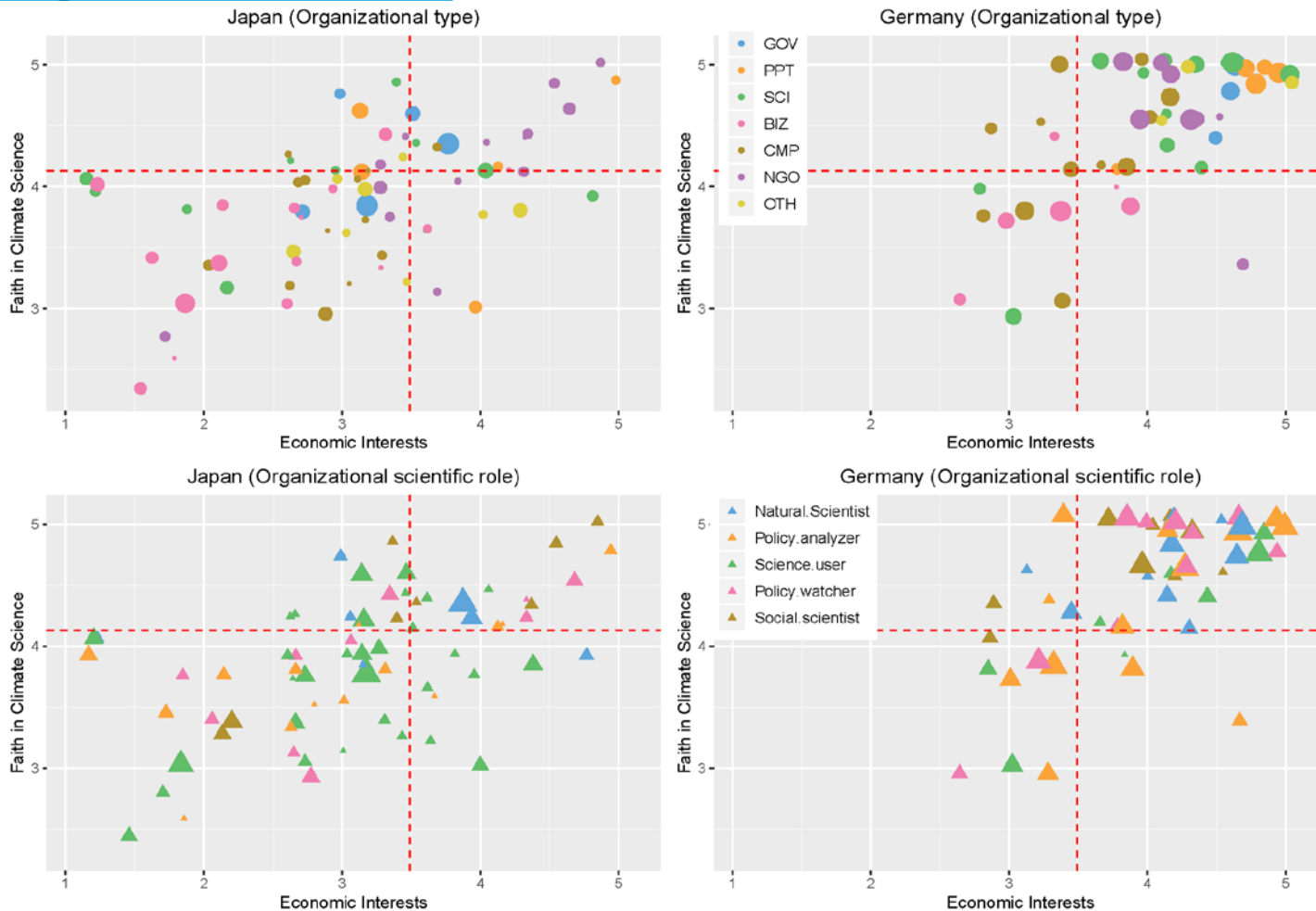
## Step 1: Different composition of the role in Germany and Japan

(%)	Natural scientist	social scientist	Policy analyzer	policy watcher	science user	total
Germany	19.6	17.6	25.5	21.6	15.7 ***	100.0
Japan	9.7	11.1	19.4	13.9	45.8 ***	100.0

Note:  $\chi^2=12.702$  (df=4,  $p < .05$ ). Significance in each cell was tested by residual analysis.

- Organizational typology based on ((A) organizational domain: natural scientific research, social scientific research; (B) Availability of staff for each research)
- Five type of actors:
  - **Natural scientists:** mainly engage in natural scientific research
  - **Social scientists:** mainly engage in social scientific research
  - **Policy analyzer:** collecting policy data and monitor the climate policy
  - **Policy watcher:** monitor the climate policy
  - **Science user:** don't engage in scientific activities by themselves
- Half of the organizations are classified as “science user” in Japan
- Mainly brought by the fact that not so many actors other than governmental organizations engage in scientific activities

## Step 2: Organizational faith



- Significantly higher score “faith in climate science” in Germany
- “Faith in climate science” strongly correlates with “the faith in economic profitability through climate policy” → **one dimension: climate belief score**

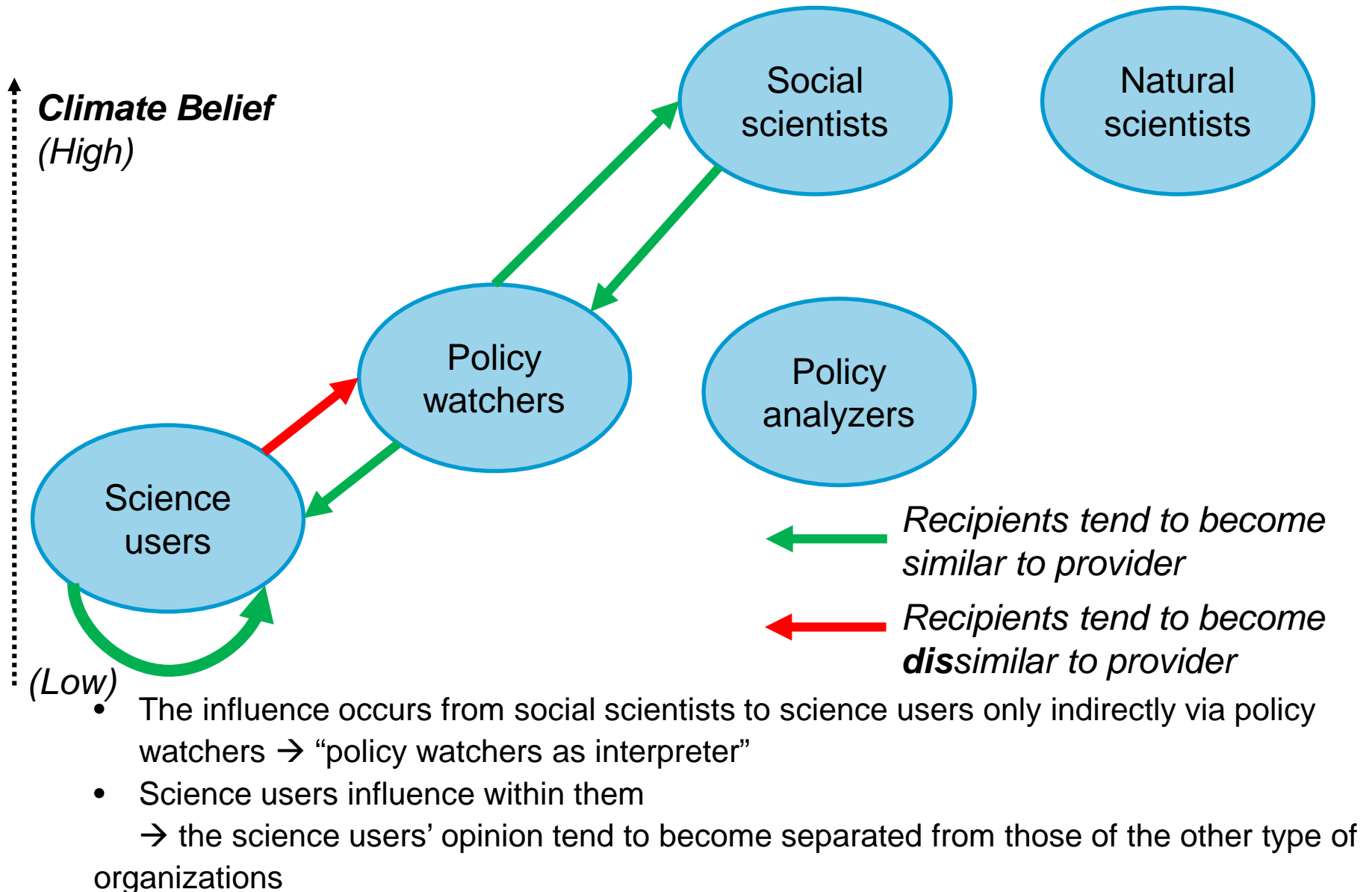


## Step 3: Multi-level analysis on climate belief score

		DV=Climate belief score					
		post.mean	est.Error	l-95% CI	U-95% CI	Eff. Sample	R-hat
	Intercept	0.75	1.54	-2.87	3.87	969	1.00
level1	Category Government	ref.					
	Political Party	0.37	0.34	-0.28	1.04	1409	1.00
	Science	-0.45	0.30	-1.03	0.13	1232	1.00
	Business Association	-0.95	0.31	-1.55	-0.35	1224	1.00
	Business Companies	-0.67	0.29	-1.23	-0.09	1225	1.00
	NGO	-0.04	0.30	-0.64	0.58	1163	1.00
	Others	-0.22	0.33	-0.86	0.45	1217	1.00
	Role Natural scientists	ref.					
	policy analyzer	-0.42	0.24	-0.90	0.05	1363	1.00
	Science user	-0.54	0.24	-0.98	-0.06	1020	1.00
	Policy watcher	-0.37	0.26	-0.90	0.15	127	1.00
	Social scientist	-0.12	0.25	-0.60	0.36	1522	1.00
	Social influence (policy advice)	0.4	0.13	0.15	0.66	2993	1.00
	level2 country intercept	2.24	2.09	0.26	7.77	772	1.01
	n	123					
	country	2					
Note: Post.Mean = Posterior mean; 95% CI = 95% credible interval; ESS = effective sample size; R-hat = Gelman-Rubin Statistic.							

- Business associations and companies tend to have lower climate belief
- “Scientific user” type organizations tend to have lower climate belief
- → Organizational capacity and awareness with respect to global warming matter
  - → Not only interests, but also ideas matters for the belief formation

## Step 4: Influence structure among the different roles: QAP regression

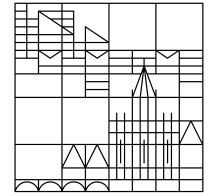


# **Conclusion**

- German societal structure contributed to the “scientification” of wider range of civil society organizations. These “scientificated” organizations expressed strong belief in climate science and economic profitability through climate policy.
- Different societal structures in policy domains generate different organizational ecologies. These different organizational landscapes in turn lead to the different orientation in the public policy

# Thank you!

Universität  
Konstanz



**Contact: Keiichi Satoh**

[keiichi.satoh@uni-konstanz.de](mailto:keiichi.satoh@uni-konstanz.de)

This work was supported by the American National Science Foundation via University of Minnesota (BCS 0827006) and Japan Society for the Promotion of Science (22243036; 15H03406; 11J07459; 15J03089; 18H00919).